

spreading-pilose; bracts filiform, 1--1.5 mm. long; lateral pedicels scarcely 1 mm. long, pseudoterminal one above the bracteoles only 0.5--1 mm. long; calyx 3 mm. long, its tube obconic, membranous, rather thickly 5-veined, the veins minutely scabridous and excurrent in linear teeth about 1 mm. long; corolla pale-lilac, about 4.5 mm. long, its tube basally cylindrical, apically to about twice as wide, very shortly pilose within at the stamen insertion, the lobes unequal, more or less semiorbicular, the anterior ones subtruncate and longer, half the length of the tube; stamens didynamous, included, the longer pair inserted at the middle of the corolla-tube, the shorter ones at 1/3 its height; longer filaments during anthesis apically dilated into an ovate densely glanduliferous appendage, the shorter one unappendaged; style about 8 mm. long; stigma oblong, oblique; fruit turbinate, the body 3--4.5 mm. long, subapically 4-horned, the horns conspicuously unequal, two 4--5 mm. long, the other two 2--3 mm. long.

The species is based on *Ekman H.8844* from Quaternary calcareous soil along roadsides near La Source on the island of Gonave, Haiti, where it is described as rare, deposited in the Stockholm herbarium. Urban & Ekman (1929) cite also *Ekman H.4500* & *H.8850* from Hairi. They comment that "omnes aliae hujus generis species floribus in spicas pluri- vel multifloras dispositis gaudet; *T[amonea] scabra* Cham. et Schlecht. foliis similis praeterea calyce paullo majore et cornubus fructuum brevioribus recedit."

Collectors have found the species growing in wet places along roadsides, at 400 m. altitude, flowering and fruiting in July and August. Material has been misidentified and distributed in some herbaria as *Tamonea curassavica* (L.) Pers.

Citations: CUBA: Oriente: *Hioram 1777* (N). HISPANIOLA: Haiti: *Ekman H.4500* (Ca--608088, F--839465, Ld, Ld, Mi, S, W--1410030). HISPANIOLAN OFFSHORE ISLANDS: Gonave: *Ekman H.8844* (F--photo of type, Ha--photo of type, N--isotype, N--photo of type, Pi--photo of type, S--type, S--isotype, Si--photo of type, Z--photo of type).

NOTES ON THE GENUS *HOSEANTHUS* (VERBENACEAE)

Harold N. Moldenke

Lack of time this late in life prevents my preparation of the complete and detailed monograph of this genus as originally planned and announced, but it has seemed advisable to place on record the bibliographic and herbarium notes on the genus accumulated by my wife and myself over the past 52 years. Explanation of the herbarium acronyms employed are fully explained in *Phytologia Memoirs* 2: 463--469 (1980) and are the same as used throughout this series of papers since 1933.

HOSEANTHUS Merr., Journ. Straits Br. Roy. Asiat. Soc. 76: 114. 1917.

Synonymy: *Hosea* Ridl., Journ. Straits Br. Roy. Asiat. Soc. 50: 124--125. 1908 [not *Hosea* Dennst., 1818].

Bibliography: Dennst., Schlüss. Hort. Malab. 31. 1818; C. B. Clarke in Hook. f., Fl. Brit. India 4: 590. 1885; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 1, 1: 561 & 1175. 1893; Gamble in King & Gamble, Journ. Asiat. Soc. Beng. 74 (2) [extra no.]: 841. 1908; Ridl., Journ. Straits Br. Roy. Asiat. Soc. 50: 124--126. 1908; Henkel, Gard. Chron., ser. 3, 48: 211 & 212, fig. 83. 1910; Prain, Ind. Kew. Suppl. 4, imp. 1, 124. 1913; E. D. Merr., Journ. Straits Br. Roy. Asiat. Soc. 76: 114. 1917; Ridl., Bull. Jard. Bot. Buitenz., ser. 3, 17: 459. 1918; Ridl., Journ. Straits Br. Roy. Asiat. Soc. 79: [17]. 1918; H. J. Lam, Verbenac. Malay. Arch. 8, 236--238, 364, & 366. 1919; H. J. Lam in Lam & Bakh., Bull. Jard. Bot. Buitenz., ser. 3, 3: 3, 72--73, 95, 109, & 112. 1921; E. D. Merr., Enum. Born. Pl. 517--518. 1921; Fedde & Schust., Justs Bot. Jahresber. 47 (2): 245. 1927; Fedde, Justs Bot. Jahresber. 47 (2): 300 & 334. 1929; Stapf, Ind. Lond. 3: 442. 1930; Wangerin, Justs Bot. Jahresber. 50 (1): 237. 1930; Junell, Symb. Bot. Upsal. 1 (4): 110, 111, & 203, fig. 174. 1934; Mold., Suppl. List Inv. Names 3. 1941; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 65 & 93. 1942; Mold., Alph. List Inv. Names 18 & 58. 1942; Mold., Phytologia 2: 104. 1944; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 2, 1: 561 & 1175. 1946; Mold., Alph. List Inv. Names Suppl. 1: 6 & 11. 1947; H. N. & A. L. Mold., Pl. Life 2: 34 & 65. 1948; Van Steenis, Bull. Bot. Gard. Buitenz., ser. 3, 17: 459. 1948; Mold., Known Geogr. Distrib. Verbenac., ed. 2, 145 & 186. 1949; Mold., Résumé 192, 266, 299, 411, 417, & 457. 1951; Angely, Cat. Estat. Gen. Bot. Fan. 17: 4. 1956; Anon., U. S. Dept. Agr. Bot. Subj. Ind. 15: 14357. 1958; Prain, Ind. Kew. Suppl. 4, imp. 2, 124. 1958; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 3, 1: 561 & 1175. 1960; F. A. Barkley, List Ord. Fam. Anthoph. 76 & 174. 1965; Airy Shaw in J. C. Willis, Dict. Flow. Pl., ed. 7, 557. 1966; Rouleau, Guide Ind. Kew. 94 & 352. 1970; Mold., Fifth Summ. 1: 325 & 449 (1971) and 2: 528, 760, 770, & 881. 1971; Airy Shaw in J. C. Willis, Dict. Flow. Pl., ed. 8, 570. 1973; Mold., Phytologia 26: 368 & 505. 1973; Gibbs, Chemotax. Flow. Pl. 3: 1753 & 1754. 1974; Mukherjee & Chanda, Trans. Bose Res. Inst. 41: 41 & 47. 1978; Mold., Phytol. Mem. 2: 315, 354, & 550. 1980.

Climbing shrubs; leaves decussate-opposite, simple, petiolate, exstipulate, the upper ones on each branchlet reddened; inflorescence cymose, axillary in the axils of the upper leaves, the cymes long-pedunculate, spreading, dichotomously branched; calyx gamosepalous, inferior, campanulate-spathaceous, zygomorphic, bilobed, the lobes ovate; corolla gamopetalous, zygomorphic, hypocrateriform, bilabiate, the tube slender, elongate, the limb 4-lobed, 3 lobes obovate, the other lobe linear-oblong; stamens 4, inserted in the corolla-tube, long-exserted; filaments filiform; anthers rounded; pistil single, compound, bicarpellary; style as long as the stamens; stigma lanceolate; ovary superior, distinctly 4-lobed, 4-celled, each cell 1-ovulate; fruit drupaceous, fusi-

form, narrowed at both ends, apically acuminate; pericarp leathery, deep-purple; seeds elongate, solitary.

Type species: *Clerodendron lobbii* C. B. Clarke [= *Hoseanthus lobbii* (C. B. Clarke) Merr.]

This is a monotypic genus, as far as now known, probably related to *Faradaya* F. Muell., from which, according to Lam (1919) its large fusiform fruits distinguish it. Junell (1934), on the basis of a Ridley specimen at Kew from the Singapore Botanical Garden, says: "Diese Gattung scheint hinsichtlich des Gynaceumbaus eine Zwischenstellung zwischen *Oxera* und *Clerodendron* einzunehmen. Der Fruchtknoten ist deutlich lobiert, und die Stellung der Samenanlagen ist dieselbe wie bei *Oxera*. Die Fruchtblatt-ränder sind jedoch nicht so stark eingerollt, und die Plazenten sind tief gespalten. Die Frucht zerfällt bei der Reife. Bei *Clerodendron* und nahestehenden Gattungen zerfällt sie gewöhnlich in vier mehr oder weniger fleischige Steine. Bisweilen abortiert eine oder mehrere Samenanlagen. Bei *Faradaya* und *Hosea* ist die grosse Frucht oft so tief geteilt, dass sie beinahe aus getrennten Teilfruchten besteht. In der Regel scheint ein Teil der Samenanlagen zu abortieren, und bei *Hosea* scheint die Frucht immer einsamig zu sein und besitzt lederartiges Perikarp. In diesem Teil von *Clerodendreae* scheint die Entwicklung auf die Ausbildung von Typen mit einsamigen, trockenen, grossen Früchten abzu zielen." He asserts, furthermore, that in *Hoseanthus*, as in *Holmskioldia*, *Oxera*, and *Faradaya* "sind die Samenanlagen mit ihrem chalazalen Teil an der Plazenta befestigt".

Ridley was the first to recognize this genus and (1918) in arguing for the retention of the name, *Hosea*, which he proposed for it, says: "In Journal No. 76, p. 114, Mr. Merrill gives as a New Genus *Hoseanthus* for my genus *Hosea* (*Verbenaceae*) on the ground that Dennstedt had previously published a genus *Hosea*. This is quite unnecessary additional synonym. Dennstedt got hold of a copy of Rheede's Hortus Malabaricus a work in several volumes of rather poor drawings of South Indian plants, and published a Schlüssel zum Hortus Indicus Malabaricus in 1818. In cases where the drawing was so poor as to be not identifiable he gave it a new generic and specific name, but as no description whatever was published by him or even any suggestion as to the order of the plant these names rank as nomina nuda and are valueless. One of these plants was apparently a shrub which was so ill done that it is impossible to certainly identify it and to this sketch Dennstedt gave the name in his list of *Hosea*. Whatever the picture was intended to represent, it has doubtless long ere this received a properly accredited name and description, but I cannot find that any one has ever identified it and I do not know what it is meant for. Where the drawings in this work have been later identified Dennstedt's name has sometimes been retained, though as he did not ever describe one of them, the names were mere nomina nuda and might have been dropped. This being the case it is quite unnecessary to add to the ever increasing synonyms by substituting *Hoseanthus* for *Hosea* to retain the latter name for a plant which no one has ever identified and probably never will identify, and

which the author Dennstedt never saw in his life nor I expect, would have recognized if he did see it. Dennstedt was evidently not so much a botanist as a compiler of lists; after publishing a Flora of Weimar in Germany he published about 4 compilations of lists of cultivated plants and the above mentioned Schluessel, and nothing else. One cannot protest too strongly against the unnecessary increase of synonyms for plants. Scientifically it has no value at all and only adds to confusion, and bulk of literature for no useful purpose."

Needless to say, Merrill rejects this argument and actually identified Dennstedt's plant as probably a species of *Symplocos* (*Symplocaceae*). Hitherto I have accepted Ridley's argument and have retained *Hosea* as the accepted name for the genus, but it now appears that a strict interpretation of the present edition of the Code holds that no matter if a description is inadequate or an illustration poor, a later homonym must be rejected unless it is formally conserved. Ridley's name has not up to now been conserved. Airy Shaw (1973) definitely accepts *Hoseanthus* as the valid name and in this I now follow him.

The genus is named in honor of George Frederick Hose (1838--1922), and English missionary who collected extensively in Malaya and the Straits Settlements.

Excluded species:

Hosea malabarica Dennst., Schlüss. Hort. Malab. 31. 1818 =
Symplocos sp., *Symplocaceae*.

HOSEANTHUS LOBBII (C. B. Clarke) Merr., Journ. Straits Br. Roy. Asiat. Soc. 76: 114. 1917.

Synonymy: *Clerodendron lobbii* C. B. Clarke in Hook. f., Fl. Brit. India 4: 590. 1885. *Hosea lobbiana* (C. B. Clarke) Ridl., Journ. Straits Br. Roy. Asiat. Soc. 50: 125. 1908. *Clerodendron lobbiana* Clarke apud Ridl., Journ. Straits Br. Roy. Asiat. Soc. 50: 125, in syn. 1908. *Hosea lobbiana* Ridl. ex Prain, Ind. Kew. Suppl. 4, imp. 1, 124. 1913. *Clerodendron lobbianum* [C. B. Clarke] ex Prain, Ind. Kew. Suppl. 4, imp. 1, 125, in syn. 1913. *Hosea lobbii* Ridl. ex E. D. Merr., Journ. Straits Br. Roy. Asiat. Soc. 76: 114, in syn. 1917; H. J. Lam, Verbenac. Malay. Arch. 227. 1919. *Hoseanthus lobbii* Merr., Enum. Born. Pl. 517, in syn. 1921. *Clerodendron lobbianum* Ridl. ex H. J. Lam in Lam & Bakh., Bull. Jard. Bot. Buitenz., ser. 3, 3: 95, in syn. 1921. *Hosea lobiana* Ridl. ex H. J. Lam in Lam & Bakh., Bull. Jard. Bot. Buitenz., ser. 3, 3: 95, in syn. 1921. *Clerodendron lobbianum* C. B. Clarke ex Mold., Alph. List Inv. Names 18, in syn. 1942. *Hoseanthus lobbii* (Ridl.) Merr. ex Mold., Résumé 299, in syn. 1959.

Bibliography: See bibliography of the genus as a whole.

Illustrations: Henkel, Gard. Chron., ser. 3, 48: 211, fig. 83. 1910; Junell, Symb. Bot. Upsal. 1 (4): 110, fig. 174. 1934.

A tall, slender, woody climber; branchlets minutely pubescent; petioles 0.6--2.5 cm. long; leaf-blades elliptic-ovate or ovate-rotund, 5--7.5 cm. long, 4--6 cm. wide, apically obtuse or broadly cuneate, marginally entire, basally rounded or subcordate,

shiny and glabrous above, minutely pubescent beneath, the upper ones on the branchlets reddened; cymes axillary, numerous, long-pedunculate, dichotomous, 12--20-flowered, minutely gray-pubescent; bracts linear, about 3 mm. long; peduncles 7.5--10 cm. long; pedicels 2--12 mm. long; calyx yellow-green, campanulate, obovate, about 1.2 cm. long, deeply bilobed, externally minutely gray-pubescent and with scattered round glands, the lobes ovate-deltoid, 5--6 mm. long, 2-toothed, valvate in bud, the teeth 2.5--3 mm. long; corolla-tube whitish, slender, narrowly infundibular, 0.5--2.5 cm. long, glabrate, the limb 4-lobed, salmon-red or orange in color, deeply bilabiate, the upper lip entire and linear-oblong, about 7 mm. long and 4 mm. wide, the lower lip 3-lobed and about 6 mm. long, the lobes rounded and 2 mm. wide, the whole limb about 1.2 cm. long and 1 cm. wide; stamens 4, inserted near the base of the corolla-tube, the filaments filiform, 2.6--5 cm. long, crimson, exserted; pollen orange in color; style filiform, about 2.8 cm. long, equaling the stamens; stigma very small, green, lanceolate; ovary glabrous, 4-lobed, the lobes elevated and rounded; fruits 1 or 2, deep-purple, fusiform or horn-shape, elongate, to 7.5 cm. long and 1.2 cm. wide at the mid-point.

The species is based on an unnumbered Lobb collection supposed by Clarke (1885) to have come from Penang, but Ridley (1908) feels certain that Lobb's collection was not made in Penang, but at Kuching, Borneo, where the species is very common. In this Merrill (1917) agrees. Gamble (1908) says that "It is a very handsome, striking plant, and has been cultivated [in Singapore]. It has the upper leaves of the spray bright red, flowers of a light salmon red, and a horn-shaped fruit about 2 in. long. There is a good picture of it in Miss North's Gallery at Kew, to which Mr. Ridley has drawn our attention."

Lam (1921) cites "Borneo: G. D. H. [Haviland - note of the author] (Smiles) p. 359, Sarawak. Distribution: W.-Borneo (also Penang?)." In his 1919 work he has a similar statement: "Distribution: Borneo (Sarawak nr. Kuching) (also Penang?)"

The only vernacular name recorded for the plant is "d'dap mira". Gibbs (1974) reports that syringin is absent from the stems and the reaction to the HCl/methanol test was negative. A pollen sample was taken from *Sinclair & Tassin 10411* by M. Srick in January 1972.

Merrill (1917) cites *Foxworthy 88, Hose 135, and Native Collector 280 & 739* from Sarawak. He comments that "The species was originally described from Penang, localized from a specimen collected by Lobb. There is not the slightest doubt but that Lobb's specimen was from Sarawak, not from Penang. I have here proposed the new generic name *Hoseanthus* for this endemic monotypic Bornean genus as the generic name proposed by Ridley is manifestly invalidated by *Hosea* Dennst."

It is perhaps worth noting here that the index on p. 334 of Just's Bot. Jahresber., vol. 47 (2), refers this species to p. "45" instead of to p. 245.

Recent collectors describe the plant as a large tall shrub

or climber, the leaves dark-green and glossy above, paler and slightly glossy beneath, the young ones orange in color, the bracts bright-orange or orange-pink, the stamens light-red or purple, the "flowers" [corollas?] bright-orange (*Brooke 8331*), "beautiful bright-orange" (*Brooke 8697*), or "orange" (*Kiah S.135*) to "salmon color" (*Foxworthy 88*) or "yellow and red inside" (*Native Collector 5268*), and the fruit as brownish-red. They have found the plant "common all along the riverbanks", "growing over bushes at the edge of tidal swamps", "in and beside water in forests", and "beside wet ditches at edge of forests", flowering in April, June, and August, and fruiting in August.

Citations: GREATER SUNDA ISLANDS: Sarawak: *Brooke 8331* (W--2319627), *8697* (W--2319683); *Foxworthy 881* (N--photo, Ph, Z--photo); *Haviland 359* (Bz--21387); *Native Collector 280* (Bz--21386, Ca--213896, Le--923213-139), *739* (Ph), *5268* (Ca--357426, N); *Sinclair & Tassim 10411* (N, N). CULTIVATED: Singapore: *Nur s.n.* [Herb. Singapore 35479] (Ba); *Sidek bin Kiah S.135* [Herb. Sing. Bot. Gard. Introd. 65] (Ba).

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NOTES ON THE GENUS *GARRETTIA* (VERBENACEAE)

Harold N. Moldenke

Lack of sufficient time at this late stage in life now prevents the preparation of the thorough monographic treatment of this genus originally planned and announced, yet it seems worthwhile to place on record the bibliographic and other notes assembled on the genus by my wife and myself in our work on the *Verbenaceae* of the world over the past 52 years. This is the 62nd genus so treated in the present series of papers. Full explanation of the herbarium acronyms herein employed will, as usual, be found in *Phytol. Mem.* 2: 463--469 (1980).

GARRETTIA Fletcher, *Kew Bull. Misc. Inf.* 1937: 71. 1937 [not *Garretia* Welw., 1858].

Bibliography: Welw., *Apont. Phytogeog. Angola* 587. 1858; Fletcher, *Kew Bull. Misc. Inf.* 1937: 71, 72, & 74, fig. 1 (1937) and 1938: 406, 409, & 437. 1938; Lam & Meeuse, *Blumea* 3: [248]--254, fig. 1. 1939; Meeuse, *Blumea* 5: 66--68. 1942; Mold., *Known Geogr. Distrib. Verbenac.*, ed. 1, 60 & 92. 1942; Hill & Salisb., *Ind. Kew. Suppl.* 10: 96 & 251. 1947; Mold., *Known Geogr. Distrib. Verbenac.*, ed. 2, 137, 144, 147, & 185. 1949; Mold., *Phytologia* 4: 79 (1952) and 4: 193--195. 1953; E. J. Salisb., *Ind. Kew. Suppl.* 11: 98 & 265. 1953; Angely, *Cat. Estat. Gen. Bot. Fan.* 17: 4. 1956; Anon., *U. S. Dept. Agr. Bot. Subj. Ind.* 15: 14362. 1959; Mold., *Résumé* 178, 189, 190, 196, 276, 382, 419, & 455. 1959; Backer & Bakh., *Fl. Java* 2: 595 & 612. 1965; F. A. Barkley, *List Ord. Fam. Anthoph.* 76 & 167. 1965; Airy Shaw in *J. C. Willis*,